The Rock Creek watershed within the City of Rockville, Maryland, is highly urbanized, with the majority of development occurring between 1950 and 1975, before environmental regulations were enacted for the management of stormwater runoff and watershed quality. The timing of this development has resulted in the creation of more impervious areas and stormwater runoff than can be controlled by existing stormwater management facilities. The highly urbanized area provides little open space that is not already committed to stormwater management, recreation, or park land.

The City is divided into three watersheds; Watts Branch on the west; Cabin John Creek in the central part of the City; and Rock Creek on the east. The City's Rock Creek tributaries drain into the mainstem, which is located in Montgomery County. Figure 1 shows the entire Rock Creek watershed. Figure 2 shows the City of Rockville study area.

The Department of Public Works (DPW) is responsible for several aspects of watershed management. DPW oversees and permits new development plans for onsite sediment control and stormwater management. The department also identifies and constructs regional needs for stormwater controls, such as modernizing outdated facilities or adding new facilities to older developed neighborhoods. Finally, DPW manages stream improvements to stabilize erosion and enhance aquatic habitat conditions. These projects are planned through comprehensive watershed studies that are managed and implemented by DPW. The studies draw on the City's Recreation and Parks Department for managing competing needs for public land and the environmental recommendations of the City's Environmental Specialist and the City Forester.

DPW completed the Cabin John Watershed Study in 1996 and has built several recommended stormwater management ponds and stream stabilization projects. The Watts Branch Watershed Study is expected to be adopted in 2001. The City started this Rock Creek Watershed study in 1997 and completed public outreach and reviews in 1999.

The City of Rockville contracted with URS and their subcontractors, Environmental Quality Resources (EQR), Loiederman Associates (LAI), and the Center for Watershed Protection (CWP), to study the conditions of the watershed, and work with the City and community to develop projects that improve stormwater management and stream valley conditions. The purpose of this report is to summarize the findings and projects that are recommended to provide maximum benefit to the overall watershed.

The consultants performed the following activities towards achieving water quantity and quality improvements for the Rock Creek Watershed within the City of Rockville:

- Collected and reviewed the data available on the existing stormwater management facilities and streams within the City
- Determined the condition of the existing stormwater management facilities and developed potential retrofits that achieve water quantity and quality improvement
- Conducted a Rapid Stream Assessment Technique (RSAT) study to rate the existing conditions of the stream segments, developed proposed stream valley restoration projects and provided data to aid in prioritizing the projects

- Conducted hydrologic modeling of the watershed to determine the stormwater quantity controls needed for stream restoration
- Prioritized subwatersheds and retrofit and restoration projects
- Completed conceptual designs for the selected retrofit and restoration projects

The consultants used the findings of the field surveys, existing data, hydrologic modeling and mapping to prioritize the subwatersheds of Rock Creek. This prioritization provided a ranking of the preferred order in which subwatersheds should be restored. The ranking accounted for the relative degradation and the opportunities for restoration available for each subwatershed.

Following the consultants' submittal of the Draft Subwatershed Prioritization Study in October 1997, the City developed a shortened list of existing stormwater management facilities that provide the most opportunity for potential retrofits to improve stormwater quantity and quality management. The list was developed by considering technical and visual factors and the expressed interests of the community. The facilities on the shortened list were evaluated using a hydrologic model. The hydrologic model was then used to evaluate the stormwater quantity control requirements of each subwatershed and the potential for each facility to be retrofitted to meet these needs. The modeling also estimated the peak discharges for predevelopment and existing development conditions for each of the subwatersheds simulated, whether a facility retrofit opportunity exists or not.

The City also developed a shortened list of stream valley restoration sites that provide the most opportunity. These sites were evaluated using additional field investigations and RSAT survey information. The hydrologic model results were used to predict the peak flows passing through each of the stream segments. The RSAT survey report, additional stream information, and the Draft Subwatershed Prioritization Study are provided in Appendices A and B.

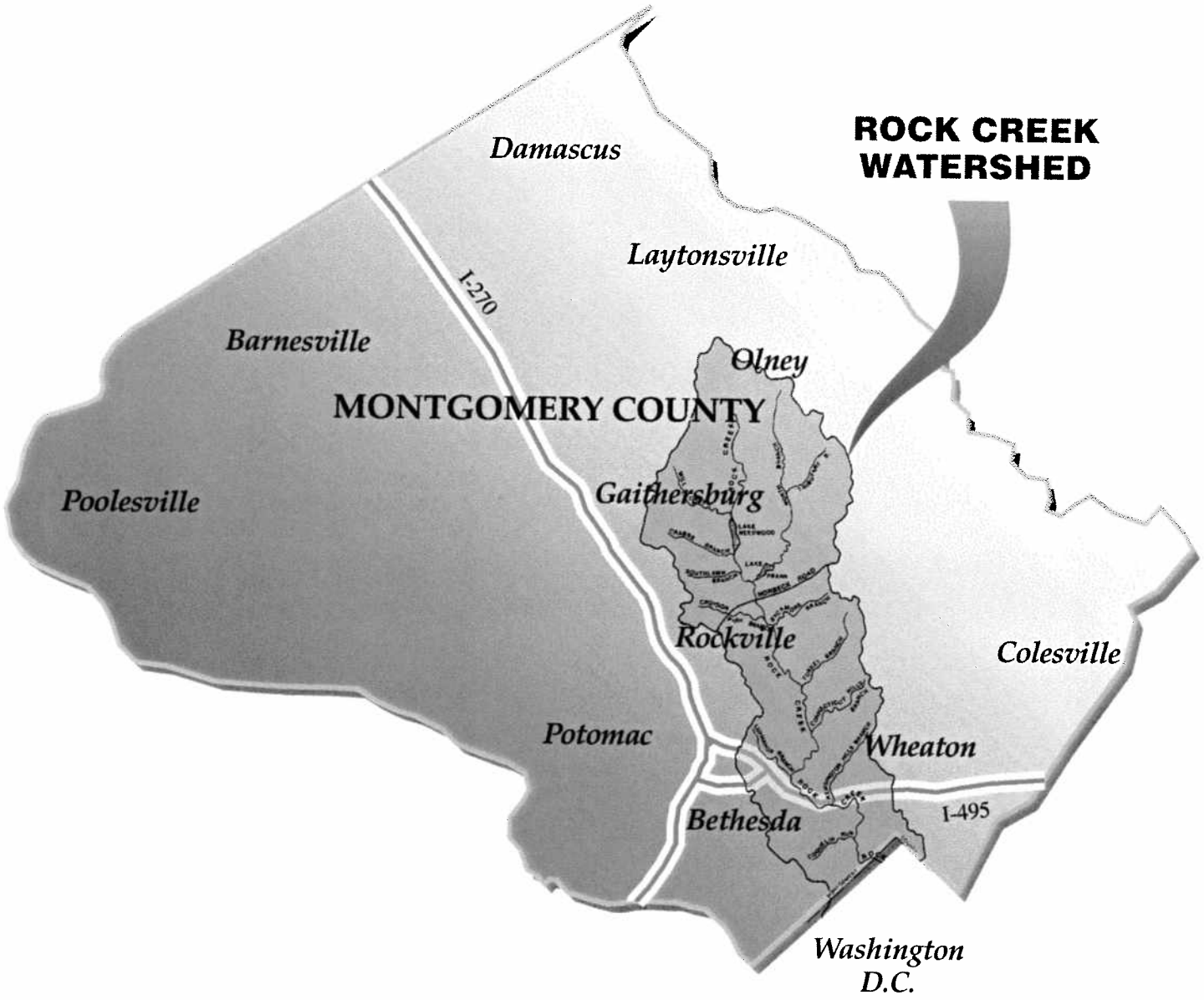
The Rock Creek Watershed Study had a number of public information meetings and open houses for residents throughout the course of the project. All Homeowners' Association and Civic Association presidents within the study area were kept informed by mail of upcoming meetings or opportunities for comment, and meetings were advertised through City and local publications. In addition, the staff mailed notices to residents within a block of any stream stabilization or stormwater project under final consideration. The staff and consultants conducted two field visits for the public.

Response was generally very favorable and no objections have been received to any of the proposed projects. Residents were informed that many of the common concerns, such as design details for landscaping or safety measures, would be more fully discussed at the final design stage.

This watershed management plan contains the findings of the watershed study and the conceptual designs for the selected stormwater management facilities and stream valley restoration sites. Section 2.0 describes the stormwater management opportunities and the four sites selected for conceptual design. Section 3.0 describes the stream valley restoration projects, methodology and sites selected for conceptual design. Section 4.0 provides recommendations for the City of Rockville based on the results of the Rock Creek Watershed Study. Details of the stormwater

management concept designs, including TR-20 hydrologic modeling, are contained in Appendix C. Stream restoration details and plans are presented in Appendix D.

Figure 1.
Location of Rock Creek Watershed
Montgomery County, Maryland



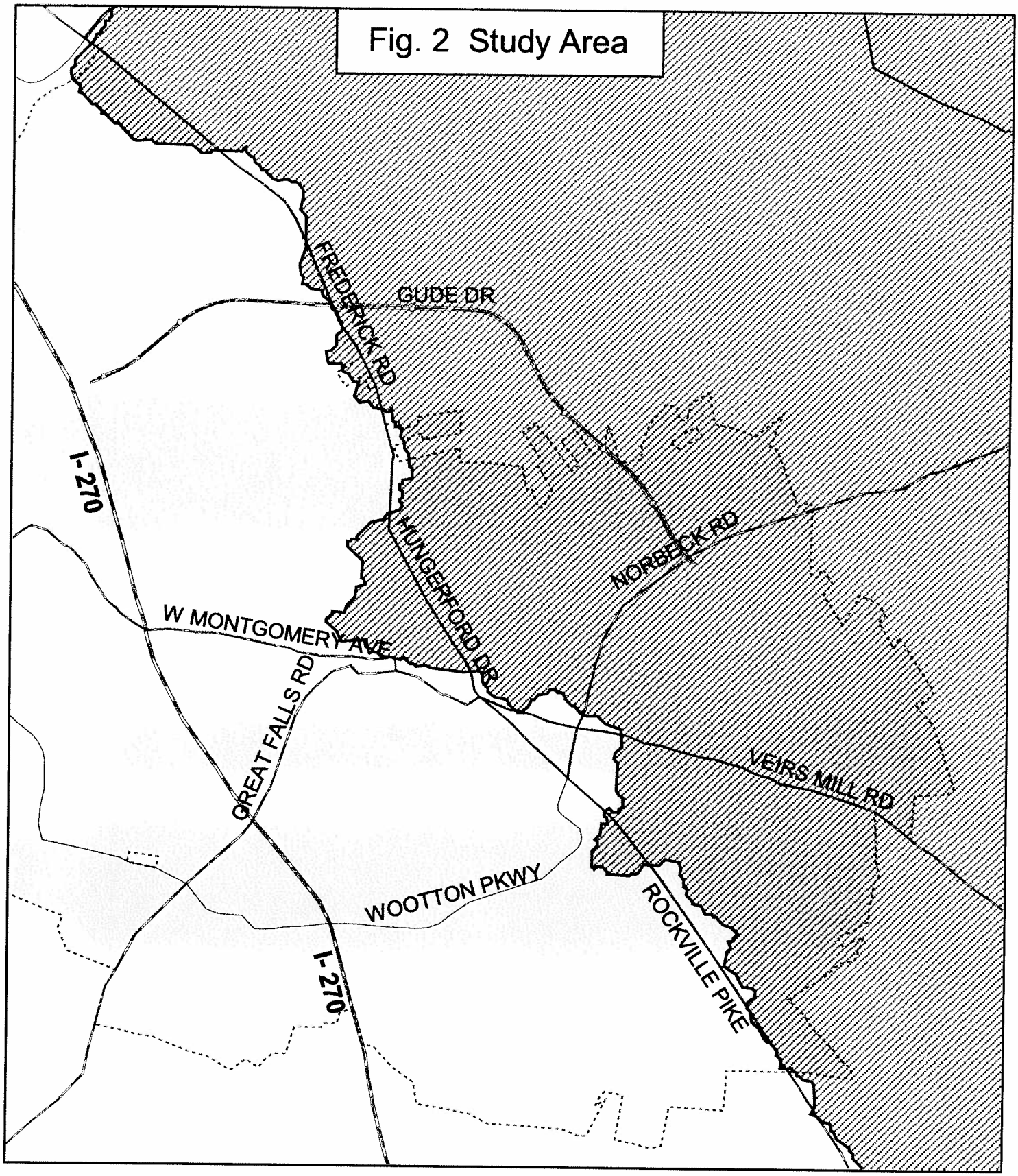


Fig. 2 Study Area
FREDERICK RD
GUDE DR
I-270
HUNGERFORD DR
NORBECK RD
W MONTGOMERY AVE
GREAT FALLS RD
VEIRS MILL RD
WOOTTON PKWY
ROCKVILLE PIKE
I-270
Legend
Rock Creek Watershed
City of Rockville Boundary
Major Road
N
W
E
S